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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GODDARD, BRIAN D

ART UNIT PAPER NUMBER

2171

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5

Please find below and/or attached an Office communication concerning this application or proceeding.

9

Office Action Summary	Application No. 09/894,394	Applicant(s) PESCHEL-GALLEE ET AL.	
	Examiner Brian Goddard	Art Unit 2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 18 December 2003.
2. Claims 1-28 are pending in this application. Claims 1, 14, 25, 27 and 28 are independent claims. In Amendment A, no claims were added or cancelled, and claim 26 was amended. This action is made Final.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2, 9-11, 14, 20-21, 24-25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by the article entitled "Lightweight Remote Procedure Call" by Bershad et al.

Referring to claim 1, Bershad discloses a system that facilitates communicating between managed and unmanaged code as claimed. See pages 44-51 for the details of this disclosure. In particular, Bershad teaches "a system that facilitates communicating between managed and unmanaged code [cross-domain procedure calls], comprising:

a first component [local procedure, object, or code segment in its protected domain (termed 'client')] that is one of the managed [in its protected domain] and unmanaged code; and

a caller [See sections 3.1 - 3.2] associated with the first component, the caller invoking [See section 3.2] an object related to a second component [remote procedure, object, or code segment outside of the first component's protected domain (termed 'server')], the second component being one of the managed and unmanaged code [outside of the first component's protected domain], the caller including an in-lined stub [See sections 3.3 & 3.5] that facilitates communications between the objects" as claimed.

Referring to claim 2, Bershad discloses the system for facilitating communication between managed and unmanaged code as claimed. See sections 3.3 and 3.5 for the details of this disclosure. Bershad teaches the system of claim 1, as above, "the in-lined stub including a call and return pair [See second paragraph of section 3.3] to facilitate communications between the objects" as claimed.

Referring to claim 9, Bershad discloses the system for facilitating communication between managed and unmanaged code as claimed. See sections 3.2 – 3.5 for the details of this disclosure. In particular, Bershad's caller further comprises "calling convention code [Modula2+ calling convention code] to...organize arguments and an execution stack [See sections 3.2-3.3 and 3.5] according to the convention of the unmanaged code" as claimed.

Referring to claim 10, Bershad discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 3.2 for the details of this disclosure. Bershad teaches the system of claim 9, as above, "the

calling convention code [Modula2+] utilized to interpret one or more return values [See page 46] from the unmanaged code” as claimed.

Referring to claim 11, Bershad discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 3.3 for the details of this disclosure. In particular, Bershad teaches the system of claim 1, as above, “the caller including at least one of an in-lined marshalling code [See the final paragraph of section 3.3] and an external marshalling code to transfer data between the objects” as claimed.

Claim 14 is rejected on the same basis as claim 2. See the discussions regarding claims 1-2 above for the details of this disclosure.

Claims 20 and 21 are rejected on the same basis as claims 9 and 11 respectively, in light of the basis for claim 14 above. See the discussions regarding claims 1-2, 9 and 11 above for the details of this disclosure.

Claims 24 and 25 are both rejected on the same basis as claim 14 above. See the discussions regarding claims 1-2 for the details of this disclosure.

Claim 28 is rejected on the same basis as claim 1. See the discussion regarding claim 1 above for the details of this disclosure.

4. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,081,665 to Nilsen et al.

Referring to claim 1, Nilsen discloses a system that facilitates communicating between managed and unmanaged code as claimed. See Figures 1-6 & 94-95 and the

corresponding portions of Nilsen's specification for this disclosure. In particular, Nilsen teaches "a system that facilitates communicating [method invocation calls] between managed and unmanaged code [byte-code or JIT-translated code methods], comprising:

a first component [byte-code or JIT-translated code segment or object] that is one of the managed and unmanaged code; and

a caller [See column 13, line 24 – column 18, line 44] associated with the first component, the caller invoking an object related to a second component [external byte-code method], the second component being one of the managed and unmanaged code, the caller including an in-lined stub [See column 15, lines 49-58] that facilitates communications between the objects" as claimed.

Referring to claim 2, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 4.2 (columns 17-18) for the details of this disclosure. In particular, Nilsen teaches the system of claim 1, as above, "the in-lined stub including a call and return pair [See steps 7 – 8 of the method of section 4.2] to facilitate communication between the objects" as claimed.

Referring to claim 3, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See column 40, lines 27-59 and column 63, line 64 – column 64, line 5 of Nilsen's specification for this disclosure. Nilsen teaches the system of claim 1, as above, "further comprising a stack marker [stack pointer(s)] that is hoisted [relocated or 'contiguously expanded'] from within a code loop associated with the caller ['a loop that repeatedly calls this procedure'

(column 40, line 46)] to facilitate code execution performance during communications between the objects” as claimed.

Referring to claim 4, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 4.2 (columns 17-18) of Nilsen’s specification for the details of this disclosure. Nilsen’s caller further comprises “transition code [‘the monitor’ (see steps 5 & 9 of the method of section 4.2)] to synchronize execution between the objects” as claimed. See section 6.2 for the details of the monitor.

Referring to claim 5, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See sections 4.2 and 5.0 as well as Figure 42 and the corresponding portion of Nilsen’s specification for this disclosure. Nilsen’s caller further comprises one or more flags [preemption flags] to synchronize execution between the objects [See the method of section 4.2 and the discussion in section 5.0] as claimed.

Referring to claim 6, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. Again, see sections 4.2 and 5.0 as well as Figure 42 and the corresponding portion of Nilsen’s specification for this disclosure. Nilsen teaches the system of claim 5, as above, “the one or more flags utilized to synchronize code execution [See steps 6-11 of the method of section 4.2] with a garbage collector [See section 5.0]” as claimed.

Referring to claim 7, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See sections 4.2, 5.0 and 5.5 as

well as Figure 42 and the corresponding portion of Nilsen's specification for this disclosure. Nilsen teaches the system of claim 6, "the one or more flags utilized to suspend return operations from the unmanaged code [preempt using 'slow pointers' (See section 5.0 and column 24, line 59 et seq.)) until operations associated with the garbage collector have completed" as claimed.

Referring to claim 8, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 4.2 for the details of this disclosure. In particular, Nilsen's caller further comprises security attribute code [JIT-translator and byte-code interpreter] to insulate the objects from at least one of code and security implementation details [See section 4.2] as claimed.

Referring to claims 9 and 10, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 4.2 for the details of this disclosure. Nilsen's caller further comprises calling convention code [pvm()] to organize arguments and an execution stack [Step 7 (See sections 2.0 – 3.0)] and interpret return values from the unmanaged code [Step 8] as claimed.

Referring to claim 11, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See section 4.2 for the details of this disclosure. Nilsen's caller includes an in-lined marshalling code [pvm()] to transfer data between the objects [See sections 2.0 – 3.0] as claimed.

Referring to claims 12 and 13, Nilsen discloses the system for facilitating communication between managed and unmanaged code as claimed. See column 5, line 66 – column 6, line 6 and the corresponding portions of Nilsen's detailed description

for the details of this disclosure. Nilsen's caller further comprises an extensibility component [‘mechanism to translate traditional Java byte codes into the extended PERC byte codes’ (column 6, lines 3-4)] including a function pointer that includes one or more functions as arguments [See sections 2.0 – 3.0] for facilitating generalized communication between the objects as claimed.

Claim 14 is rejected on the same basis as claim 2. See the discussions regarding claims 1 and 2 above for the details of this disclosure.

Claims 15-16 are rejected on the same basis as claims 3-4 respectively, in light of the basis for claim 14. See the discussions regarding claims 1-4 above for the details of this disclosure.

Claims 17-20 are rejected on the same basis as claims 6-9 respectively, in light of the basis for claim 14. See the discussions regarding claims 1-9 above for the details of this disclosure.

Claims 21-23 are rejected on the same basis as claims 11-13 respectively, in light of the basis for claim 14. See the discussions regarding claims 1-2 and 11-13 above for the details of this disclosure.

Claims 24 and 25 are rejected on the same basis as claim 14. See the discussions regarding claims 1-2 above for the details of this disclosure.

Claim 26 is rejected on the same basis as claim 15, in light of the basis for claim 25. See the discussions regarding claims 1-3 above for the details of this disclosure.

Claim 27 is rejected on the same basis as claims 1-3 above. See the discussions regarding claims 1-3 for the details of this disclosure.

Claim 28 is rejected on the same basis as claim 1. See the discussion regarding claim 1 above for the details of this disclosure.

Response to Arguments

5. Applicant's arguments filed 18 December 2003 have been fully considered but they are not persuasive.

Referring to applicants' remarks on pages 6-7 regarding the Section 102 rejections of the independent claims over Bershad: Applicants argued that Bershad's stub is different from the claimed "in-lined stub" because it is external to the calling function, and therefore that Bershad does not teach or suggest an "in-lined stub" as claimed.

The examiner disagrees for the following reasons: Applicants are arguing over features that are not claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the in-lined stub is incorporated within a calling function and facilitates higher processor execution performance than what is permitted by calling an external stub routine) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The examiner maintains that Bershad's caller [termed 'client' (see grounds of rejection above)] includes an in-lined stub ["A client makes an LRPC by calling into its stub procedure" (Bershad, section 3.2, pg. 45; emphasis added)] as claimed.

Referring further to applicants' remarks on page 7 regarding the Section 102 rejections of the independent claims over Bershad: Applicants argued that Bershad does not disclose or suggest communication between managed and unmanaged object systems as recited in the claims.

The examiner disagrees for the following reasons: Again, applicants are arguing features which are not claimed. It is noted that the claims recite communication between managed and unmanaged code, not managed and unmanaged object systems as argued by applicants. Applicants further attempt to argue that unmanaged systems require the objects themselves to manage object lifetimes. However, no such limitation is present in the claims. Bershad's communication between protected [client] and unprotected [server] domains discloses the claimed communication between managed and unmanaged code because the protected domains are 'managed' by the client, while the unprotected domains are 'unmanaged' by the client.

Referring to applicants' remarks on page 8 regarding the Section 102 rejection of the independent claims over Nilsen: Applicants repeated the arguments as addressed in regard to the Bershad reference. Namely, applicants argued that Nilsen neither discloses nor suggests an in-lined stub and/or communications between managed and unmanaged object systems.

The examiner disagrees for the same reasons as provided above, and for the following additional reasons: Nilsen's stub is not external to the calling function, contrary to applicants' assertions. Nilsen explicitly states that the stub is hard-coded into the caller's code (Column 14, lines 2-6), making the stub in-lined (Column 15, lines

49-58) as claimed. Refer also to Column 26, lines 36-53 of Nilsen's specification for additional disclosure along these lines. Therefore, the examiner maintains that Nilsen does disclose the "in-lined stub" as claimed. Finally, Nilsen's communications between byte-code or JIT-translated [managed] methods and external byte-code [unmanaged] methods discloses the claimed communication between managed and unmanaged code.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bdg
09 March 2004



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